Meeting of the Central Valley Flood Protection Board
August 26, 2010

Staff Report – Encroachment Permit

California Department of Transportation, District 6
State Route 99 Bridge Improvements, Tulare County

1.0 – ITEM

Consider approval of Permit No. 18602 (Attachment B)

2.0 – APPLICANT

California Department of Transportation, District 6

3.0 – LOCATION

The limits of the bridge project extend from 0.18 mile north of the Goshen Overhead to the Conejo Avenue (Route 201 in Kingsburg) in Tulare County (See Attachment A for Location Map).

4.0 – DESCRIPTION

The proposed work will upgrade Route 99 from 4 and 5 lanes to 6 lanes and widen all shoulders to 10 feet. Currently there are three lanes in the northbound (NB) direction from the beginning of the project to the Traver interchange, approximately 7.0 miles. The limits of the proposed project are from post mile (PM) 41.3 to PM 53.9 in Tulare County. Proposed work will consist of adding 1 or 2 lanes in the median for a total of six lanes. In the proposed project, the existing Kings River Bridge will be completely replaced. The replacement will require cross median detours. The existing three-lane section of NB SR 99 from PM 41.3 to 48.0 will have the Number 3 lane completely reconstructed and the Number 2 lane will be partially reconstructed. Between the Traver Interchange and the Avenue 384 Interchange the NB Number 2 lane will also be completely reconstructed.

The new Kings River bridge will be constructed in three phases, basically as three bridges that will tie together to become one bridge when finished. The center portion with the middle 2 columns will be constructed first. Due to the limited space between the existing bridges the spacing will be 17 feet 9 inches between the 2 columns. In the

second phase the southbound bridge will be removed and reconstructed with its 2 piles being 21.5 feet apart, and the column closest to the central bridge will be spaced 17 feet 9 inches from the column of the first phase bridge. In the third phase the northbound bridge will be removed and replaced with the same spacing as the southbound bridge in phase 2.

Each of existing Kings River bridges within the Board's designated floodway have 8 pier walls in the riverbed that are 1.5-foot thick by approximately 37-foot long. The existing supports have a combined area of 888 square feet. The proposed bridge will be supported by a total of 18 columns, 3 rows of 6 with 4 feet diameters for a total area of 226.2 square feet. The existing piers will be removed at least 3 feet below the bottom of the channel. The finished bridge structure will still be 500-foot long and 117.2-foot wide.

5.0 – PROJECT ANALYSIS

Based on the review of the proposed bridge project, the following analyses were made.

5.1 – Hydraulic Analysis

The hydraulic analysis to calculate the water surface elevation (WSE) and the velocity for the existing structure that will remain and for the proposed new structures at Kings River, was conducted using a one-dimensional computer program, BrEase. The analysis was based on a roughness coefficient of 0.035 and a gradient of 0.0007 with a 100-year flow of 13, 000 cfs. The average WSE for the 100-year discharges at the upstream face of the bridge was 285.2 ft. The available freeboard for 100-year event was approximately 8.5 feet. Based on the communication with Michael Foster, Caltrans Project Engineer, all elevations used in the plans and sections are in NAVD88.

The scour analysis was also conducted for the bridge piers and is discussed in section 6.0, Geotechnical Analysis. The scour potential has been incorporated into the bridge foundation design. No hydraulic impact analysis was conducted due to the placement of grouted rock slope protection. However, based on experience in similar projects, the hydraulic impact analysis is not expected due to grouted rock slope protection.

5.2 – Geotechnical Analysis

The subsurface soils in the project area (situated within the Kings River) consist of alluvium and flood plain deposits made up primarily of granular inter-bedded sands, silts, clayey silts, silty sands with minor amounts of clay. These deposits vary in consistency from loose near the surface to very dense at depth. During field exploration, groundwater was encountered in all of the exploratory borings. The design groundwater level was considered to be at the finish grade elevation of the bent supports.

Based on the 1996 Caltrans Seismic Hazard Map, the controlling fault for the project alignment is the Coast Ranges-Sierra Block Boundary Zone Fault, which is a reverse fault. This fault is located approximately 47 miles west from the project site. The Maximum Credible Earthquake moment magnitude (Mw) at the project site due to this fault was estimated to be 7.0 Mw. The peak bedrock acceleration at the bridge site is estimated to be 0.2g. This was estimated based on Caltrans ARS curve.

The liquefaction potential at the site has been considered to be negligible as per the analysis done by the Caltrans geotechnical section. The subject site is not located within any Earthquake Fault Zone (EFZ) as defined by the California Department of Conservation (Special Publication 42, 1997). There are no known faults crossing beneath or extending directly toward the site. Therefore, the potential hazard due to ground rupture is also considered to be very low at the site.

The scour potential was assessed in accordance with FHWA Technical Advisory T5140.23, "Evaluating Scour at Bridges", and based on current Caltrans guidelines. The existing bridge was determined to be not scour critical. The NBIS Item 113 code was changed from 6 to 8, "Bridge Foundations determined to be stable for calculated scour conditions; calculated scour is above top of footing". The potential local pier scour was calculated to be 4.8 ft for Piers 2 through 9 at elevation 267.4 ft. Based on Caltrans' Structure and Hydraulics Division, all foundations will be designed considering the possible scour or lateral stream migration.

Soil corrosivity was also determined at the site as it effects the pile foundations. Due to the very granular nature of the subsurface soils, the foundation materials have been considered to be non-corrosive to construction materials or structural elements.

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with this project, from all pertinent agencies are shown below:

- A 208.10 letter from the U.S. Army Corps of Engineers (USACE) is not required because the project is located in the Board's designated floodway with no project levee or other project flood control facilities at or near the site.
- Board staff has received an endorsement from the Kings River Conservation District on this project with additional comments which has been incorporated in the permit.

7.0 –CEQA ANALYSIS

The Board staff has reviewed the Draft Initial Study/Mitigated Negative Declaration (IS/MND, SCH Number: 2006051047, April 2006), Final Initial Study/Mitigated Negative Declaration (IS/MND, SCH Number: 2006051047, October 2006) and Mitigation Monitoring Plan prepared by the California Department of Transportation as the lead agency. The California Department of Transportation determined that the project would not have a significant effect on the environment and adopted the IS/MND and Mitigation Monitoring Plan and filed a Notice of Determination on November 8, 2006. These documents may be viewed or downloaded from the Central Valley Flood Protection Board website at the following location under a link for this agenda item.

http://www.cvfpb.ca.gov/meetings/2010/8-26-2010agenda.cfm

Board staff finds that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. The project proponent has incorporated mandatory mitigation measures into the project plans to avoid identified impacts or to mitigate such impacts to a point where no significant impacts will occur. These mitigation measures are included in the project proponent's Mitigation Reporting Plan and address impacts to biological resources and noise.

8.0 – SECTION 8610.5 CONSIDERATIONS

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

   The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

   The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on the entire State Plan of Flood Control:

This project does not have significant impacts on the State Plan of Flood Control, as the project does not impair the structural or hydraulic functions of the system.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

   Climate change issues have not been taken into account; however, it is assumed to be inland past the point tidal influence raises WSE. There are no other foreseeable projected future events that would impact this project.

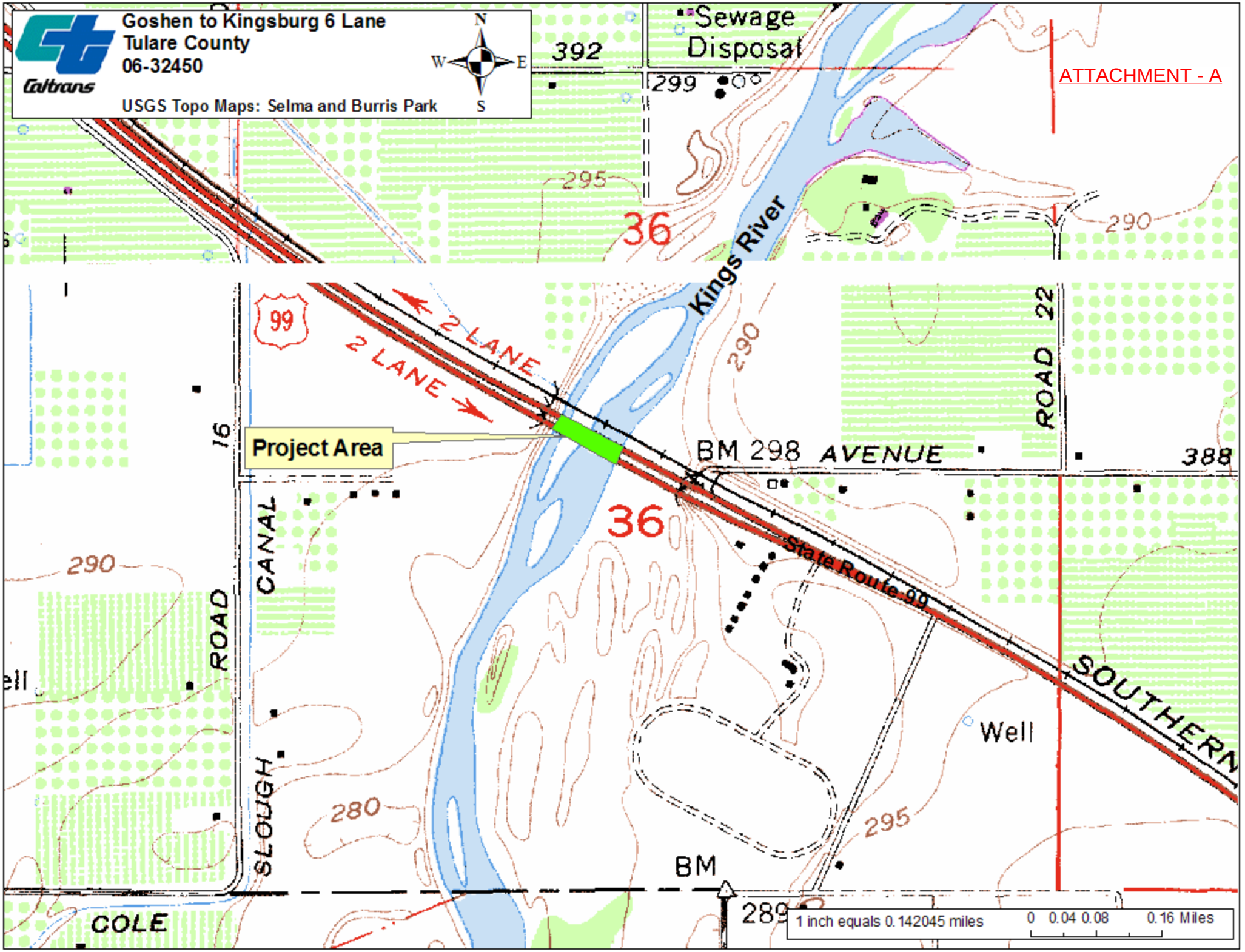
9.0 – STAFF RECOMMENDATION

Staff recommends that the Board adopt the CEQA findings and approve Permit no. 18602, and direct staff to file a Notice of Determination with the State Clearinghouse.

10.0 – LIST OF ATTACHMENTS

A. Location Map
B. Draft Permit No. 18602

Design Review:	Deb Biswas, PhD, PE
Hydraulic Review:	Deb Biswas, PhD, PE
Geotechnical Review:	Deb Biswas, PhD, PE
Environmental Review:	James Herota, MPP
Document Review:	Dan Fua, P.E.
	Len Marino, P.E.


Goshen to Kingsburg 6 Lane
Tulare County
06-32450
USGS Topo Maps: Selma and Burris Park
Caltrans
N
W
E
S
ATTACHMENT - A
Sewage Disposal
392
299
295
36
290
Kings River
99
2 LANE
2 LANE
Project Area
16
BM 298
AVENUE
22
ROAD
388
36
290
CANAL
ROAD
State Route 99
SOUTHERN
Well
SLOUGH
280
295
BM
289
COLE
1 inch equals 0.142045 miles
0 0.04 0.08 0.16 Miles

DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY

THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18602 BD

This Permit is issued to:

California Department of Transportation
2015 East Shields Avenue, Suite 100
Fresno, California 93726

To remove north and southbound bridges and construct a new 500-foot-long, 117.2-foot-wide bridge supported by 18 columns, 3 rows of 6, with 4-foot-diameter piers within the Designated Floodway of Kings River. The project is located southeast of Kingsburg (Section 36, T16S, R22E, MDB&M, Kings River, Tulare County).

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

Dated: _____

_____
Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15

days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 18602 BD

THIRTEEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

FOURTEEN: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California; including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

FIFTEEN: The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims related to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

SIXTEEN: The mitigation measures approved by the permittee and found in its Mitigation and Monitoring Program (MMRP) are made a condition of this permit. The permittee shall implement all such mitigation measures. However, the measures in the MMRP may be modified to accommodate changed circumstances or new information not triggering the need for subsequent or supplemental analysis as allowed by law under CEQA Guidelines Sections 15062 or 15063 with advance notice of the proposed changes and submittal of supporting documentation for review and comment to the Staff Environmental Scientist of the Central Valley Flood Protection Board.

SEVENTEEN: The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Department of Water Resources or any other agency responsible for maintenance.

EIGHTEEN: The permittee shall contact the Department of Water Resources by telephone, (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

NINETEEN: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense.

TWENTY: If the project, or any portion thereof, is to be abandoned in the future, the permittee or successor shall abandon the project under direction of the Central Valley Flood Protection Board and Department of Water Resources, at the permittee's or successor's cost and expense.

TWENTY-ONE: No construction work of any kind shall be done during the flood season from November 1 to July 15 without prior approval of the Central Valley Flood Protection Board.

TWENTY-TWO: The Central Valley Flood Protection Board, Department of Water Resources, and Kings River Conservation District shall not be held liable for damages to the permitted encroachment(s) resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

TWENTY-THREE: The permitted encroachment(s) shall not interfere with operation and maintenance of the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) under direction of the Central Valley Flood Protection Board or Department of Water Resources. If the permittee does not comply, the Central Valley Flood Protection Board may modify or remove the encroachment(s) at the permittee's expense.

TWENTY-FOUR: Debris that may accumulate on the permitted encroachment(s) and/or any temporary falsework within the floodway shall be cleared off and disposed of outside the floodway after each period of high water.

TWENTY-FIVE: All debris generated by this project shall be disposed of outside the floodway.

TWENTY-SIX: The abandoned or dismantled bridge shall be completely removed and disposed of outside the limits of the floodway.

TWENTY-SEVEN: Prior to start of any demolition and/or construction activities within the floodway, the applicant shall provide the Central Valley Flood Protection Board with two sets of layout plans for any and all temporary, in channel cofferdam(s), gravel work pad(s), work trestle(s), scaffolding, piles and/or other appurtenances that are to remain in the floodway during the flood season from

November 1 through July 15.

TWENTY-EIGHT: Cleared trees and brush shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1 to July 15.

TWENTY-NINE: Backfill material for excavations within the levee section and within 10 feet of bridge supports within the floodway shall be placed in 4- to 6-inch layers and compacted to a minimum of 90 percent relative compaction per ASTM Method D1557-91 and above optimum moisture content.

THIRTY: Density tests by a certified materials laboratory will be required to verify compaction of backfill within the floodway.

THIRTY-ONE: The permittee shall submit as-built drawings to the Department of Water Resources' Flood Project Inspection Section upon completion of the project.

THIRTY-TWO: The soffit of the bridge shall provide a minimum freeboard of 3-feet above the design flood elevation.

THIRTY-THREE: Temporary staging, formwork, stockpiled material, equipment, and temporary buildings shall not remain in the floodway during the flood season from November 1 to July 15.

THIRTY-FOUR: The work area shall be restored to the condition that existed prior to start of work.

THIRTY-FIVE: In the event that bank erosion injurious to the adopted plan of flood control occurs at or adjacent to the permitted encroachment(s), the permittee shall repair the eroded area and propose measures, to be approved by the Central Valley Flood Protection Board, to prevent further erosion.

THIRTY-SIX: Revetment (rip-rap) shall be uniformly placed and properly transitioned into the bank, or adjacent revetment (rip-rap) and in a manner which avoids segregation. Asphalt or other petroleum-based products shall not be used as fill or erosion protection within the floodway.

THIRTY-SEVEN: The recommended minimum thickness of revetment (rip-rap), measured perpendicular to the bank, is 18 inches below the usual water surface and 12 inches above the usual water surface.

THIRTY-EIGHT: Piers, bents, and abutments being dismantled shall be removed to at least 1 foot below the natural ground line and at least 3 feet below the bottom of the low-water channel.

THIRTY-NINE: The piers shall be constructed parallel to the direction of flow.

FORTY: Drainage from the bridge or highway shall not be discharged onto the streambank.

FORTY-ONE: The permittee shall comply with all conditions set forth in the letter from the Kings River Conservation District dated July 14, 2010, which is attached to this permit as Exhibit A and is incorporated by reference.

FORTY-TWO: The permittee shall notify the Kings River Conservation District, 4886 East Jensen

Avenue, Fresno, California 93725, telephone (559) 237-5567, at least ten working days prior to commencement of work.

EXHIBIT - A

KRCD
Kings River Conservation District

4886 East Jensen Avenue
Fresno, California 93725

Tel: 559-237-5567
Fax: 559-237-5560

www.krcd.org

July 14, 2010

Mr. Mike Patterson
Floodway Protection Section
Central Valley Flood Protection Board
P.O. Box 942836
Sacramento, CA 94236

Re: Kings River Designated Floodway – Encroachment Permit Application
KRCD No. 800.05-245 – California Department of Transportation
Widening of State Route 99

Dear Mr. Patterson:

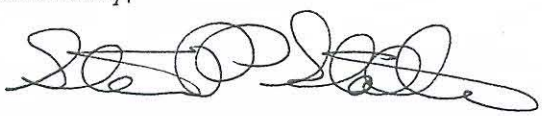
The Kings River Conservation District (District) received a copy of the application previously transmitted to the Central Valley Flood Protection Board (CVFPB) by the California Department of Transportation. The project is located on the Upper Kings River, C.M. 42.2 in Section 36, T.16 S., R.22 E., M.D.B. & M. of Tulare County.

The District has no objection to the approval of this Application subject to the following conditions:

1. The applicant shall be responsible for the removal and clearance of all debris which lodges or collects against any portion of the bridge structure during periods of high water.
2. As trees and brush are cleared, they shall be properly disposed outside the limits of the designated floodway.
3. The applicant shall repair any erosion of the banks at the project site and the repaired areas are provided with adequate protection to prevent further erosion.
4. The applicant shall notify the Kings River Conservation District, 4886 East Jensen Avenue, Fresno, California 93725, (559) 237-5567 at least ten (10) day's prior to commencement of work.

If you have any questions, please contact Keith Seligman, Manager of Flood Operations & Maintenance at (559) 237-5567 extension 120 or at (559) 217-4285. Please provide the District with a copy of any pertinent correspondence and Board action concerning this application.

Sincerely,



Steven P. Stadler, P.E.
Chief Engineer

SPS/KS/sjs

Cc: G. William Norris, III – California Department of Transportation

L10-0129
File: 800.05.245